WHAT IS CLAIMED IS:

1. A method of processing a volumetric scan of a periodically moving object, comprising:

performing a volumetric scan of a periodically moving object;

identifying a time interval of a periodic movement of said periodically moving object within said volumetric scan; and

rearranging said volumetric scan based on said time interval.

2. The method of claim 1, said volumetric scan further comprising adjacent scan planes, said method further comprising:

identifying a quantity of adjacent scan planes within said time interval;

dividing said adjacent scan planes based on said time interval; and

combining scan planes having a same point in time with respect to said time interval.

3. The method of claim 1, said volumetric scan further comprising two dimensions of spatial information and one dimension of combined spatio-temporal information.

4. The method of claim 1, said volumetric scan being performed using one of color flow, power Doppler, tissue Doppler, B-flow, and B-mode.

5. The method of claim 1, said performing step further comprising scanning said periodically moving object once in a single direction.

6. The method of claim 1, said volumetric scan further comprising adjacent scan planes, said method further comprising:

dividing said adjacent scan planes into subsets based on said time interval;

identifying a point in time for each scan plane within said subsets with respect to said time interval; and

combining said scan planes having a same point in time into volumes, said volumes comprising three spatial dimensions.

7. The method of claim 1, said performing step further comprising scanning said periodically moving object once in a single direction over at least two time intervals.

8. A method of acquiring a diagnostic image of a periodically moving object, comprising:

acquiring a series of scan planes comprising a moving object, said moving object repeating a cycle of movement over time, said acquiring step being accomplished over at least two movement cycles;

identifying at least one common point of interest within each of said series of scan planes;

comparing intensity values of said at least one common point of interest between said series of scan planes;

identifying at least two intensity values within said series of scan planes based on a result of said comparing step; and

rearranging said series of scan planes based on said at least two intensity values.

9. The method of claim 8, said comparing step further comprising calculating an autocorrelation of said intensity values of said at least one common point.

10. The method of claim 8, further comprising calculating a time interval between said at least two intensity values, said time interval identifying a length of said cycle of movement.

11. The method of claim 8, said identifying at least one common point step further comprising:

identifying border areas of said series of scan planes around an interior portion, a size of said border areas being predefined; and

said at least one common point being defined within said interior portion based on a pattern, said pattern having a size and resolution based on at least one of a speed of said moving object, a size of said moving object, and a template corresponding to an anatomy of said moving object.

12. The method of claim 8, said at least one common point further comprising between every two points and every 10 points of said series of scan planes.

13. The method of claim 8, further comprising:

identifying at least one additional common point of interest within each of said series of scan planes;

calculating autocorrelations of said intensity values of said at least one common point and said at least one additional common point; and

calculating a sum of said autocorrelations, said rearranging step being based on said sum.

14. The method of claim 8, further comprising:

calculating a time interval between said at least two intensity values, said time interval identifying a length of said cycle of movement over time;

identifying a number of said series of scan planes within said time interval; and

combining at least two scan planes into a volume, said scan planes having a same position in time with respect to said time interval.

15. The method of claim 8, further comprising:

storing said series of scan planes in a memory; and

retrieving said series of scan planes from said memory prior to said identifying at least one common point step.

16. The method of claim 8, said acquiring step further comprising scanning said moving object once in a single direction.

17. The method of claim 8, wherein said at least two intensity values being maximum values.

18. An apparatus for acquiring a volumetric scan of a periodically moving object, comprising:

a transducer comprising an array of elements for transmitting and receiving ultrasound signals to and from an area of interest comprising a periodically moving object;

a transmitter for driving said array of elements to scan said periodically moving object once in a single direction;

a receiver for receiving said ultrasound signals, said ultrasound signals comprising a series of adjacent scan planes;

a memory for storing said series of adjacent scan planes as a volumetric data set; and

a processor for processing said series of adjacent scan planes, said processor identifying a time interval based on said periodically moving object, said processor rearranging said series of adjacent scan planes based on said time interval.

19. The apparatus of claim 18, said moving object comprising one of a fetal heart, a heart, a heart valve, a vein, and an artery.

20. The apparatus of claim 18, said processor further comprising:

identifying at least one common point on each said scan plane;

identifying intensity values of said at least one common point; and

determining at least two peak intensity values, said time interval being based on said at least two peak intensity values.

21. The apparatus of claim 18, said processor further comprising:

identifying multiple common points of interest on each said scan plane;

identifying intensity values for each of said multiple common points;

calculating autocorrelations of said intensity values; and

calculating an average of said autocorrelations, said time interval being based on said average.

22. The apparatus of claim 18, said processor further comprising:

identifying multiple common points of interest on each said scan plane;

identifying intensity values of said multiple common points;

calculating a power spectrum of said intensity values; and

identifying said time interval based on a zero point and a first significant local maximum in said power spectrum.

23. The apparatus of claim 18, said processor further comprising combining scan planes having a same position within said time interval into a series of volumes.